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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,088	12/16/2003	Thomas L. Kelly	KES0003US	5181
23413 7590 06/03/2011 CANTOR COLBURN LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER				
A. PHU DIEU TRAN				
ART UNIT		PAPER NUMBER		
3633				
NOTIFICATION DATE		DELIVERY MODE		
06/03/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

### Office Action Summary

**Application No.**

10/737,088

**Applicant(s)**

KELLY, THOMAS L.

**Examiner**

PHI A

**Art Unit**

3633

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12, 13, 15, 17-23, 25, 26, 28, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-13, 15, 17-23, 25-26, 28, 30-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/5/2011 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12-13, 15, 25-26, 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12-13, 15 depend on cancelled claim 11. The claims are confusing. They are examined as best understood to depend on claim 1.

Claims 25-26, 28 depend on cancelled claim 24. The claims are confusing. They are examined as best understood to depend on claim 18.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482).

Kelly (figure 30) shows a roof system comprising a roof deck (12), a primary waterproofing membrane (90) disposed over at least a substantial portion of the roof deck, a roof insulation layer (14, the lower layer) loose laid over primary waterproofing membrane, an energy absorbing layer (14, the layer below layer 9) supported by the insulation layer, a secondary waterproofing membrane (9) loose laid over the energy absorbing layer, the energy absorbing layer is gypsum board, joints in the insulation layer are offset from joints in the energy absorbing layer (inherently so the layer lays offset from any joint of the energy layer), at least one intentional wrinkle disposed over an open area of the relatively upper surface of the frangible energy absorbing layer that is absent any attachment structure, adhesive, or other structure protruding upwardly from the relatively upper surface of the frangible energy absorbing layer relative to a substantive remainder of the relatively upper surface of the frangible energy absorbing layer, said open area between the waterproof membrane and the relatively upper surface of the energy absorbing layer at the wrinkle allowing the waterproof membrane to be pulled down towards the relatively upper surface of the frangible energy absorbing layer in response to hail impact the waterproof membrane without interference from any attaching to said relatively upper surface of the frangible energy absorbing layer or structure between the waterproof membrane and the relatively upper surface of the frangible energy absorbing layer.

Kelly does not show the energy absorbing layer is of a different material than the insulation layer, the waterproof membrane is completely unattached to any portion of the roof

system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer.

Kelly discloses the layers (14) being made of gypsum, OSB, fiber board, or wood, the energy absorbing layer being completely unattached to any portion of the roof system for a substantial length running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer (9, figures 17, 32).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's insulating layer to show the layer being made of wood in order to provide the roof structure with an insulating layer that also provides good supporting strength, and having the waterproof membrane is completely unattached to any portion of the roof system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer since it would allow for the quick covering of a large area while still securing holding down the membrane where needed.

Kelly as modified shows the energy absorbing layer is of a different material than the insulation layer.

3. Claims 1-2, 6, 9-10, 12-13, 15, 17, 22-23, 25-26, 28, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482).

Kelly (figure 30) shows a roof system comprising a roof deck, an insulation layer (lower layer, 14), the insulation layer is more compressible and resilient than the roof deck (wood), a

frangible energy absorbing layer (14 upper layer, gypsum board inherently is frangible) supported by the insulation layer, a waterproof membrane (9) loose laid over the frangible energy absorbing layer, the energy absorbing layer being gypsum board, the joints in the insulation layer being offset from joints in the energy absorbing layer (inherently so as the insulation layer lays offset from the joint of the energy layer), the deck is air sealed, the membrane(9) is air sealed to a wall structure (26), the membrane is installed with at least one intentional wrinkle (figures 15,25-26), the at least on wrinkle is located at a perimeter edge of the deck (where part 9 bent from horizontal to vertical to attach to part 26), the at least one wrinkle is located within a field of the membrane (figures 15, 25-26), the at least one wrinkle is located at protrusions (figure 15, 25-26) of the roof membrane, the at least one wrinkle is located at both a field of the membrane and perimeter edge of the roof deck, the at least one wrinkle is adhered to an underlying layer (88, 67 figures 15, 25-26) of the system with an adherent (16, 16) composed to yield to shear force thereon, a wind blown debris resistant roof system comprising a roof deck (12, figure 31), a layer of stiff material (the layer below layer 90) attached to the roof deck, a primary waterproofing membrane (90) supported by the stiff material, a roof insulation (14, the lower layer 14) and frangible energy absorbing layer (14, the layer below layer 9 and above the lower layer 14) loose laid over the primary water proofing membrane, a secondary waterproofing membrane (9) disposed over the frangible energy absorbing layer, a preexisting roof assembly that is air sealed underlying at least the energy absorbing layer, at least one wrinkle is a folding back on the membrane upon itself (figure 14-15, 22).

Kelly does not show the energy absorbing layer is of a different material than the insulation layer, the waterproof membrane is completely unattached to any portion of the roof

system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer.

Kelly discloses the layers (14) being made of gypsum, OSB, fiber board, or wood, the energy absorbing layer being completely unattached to any portion of the roof system for a substantial length running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer(9, figures 17, 32).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's insulating layer to show the layer being made of wood in order to provide the roof structure with an insulating layer that also provides good supporting strength, and having the waterproof membrane is completely unattached to any portion of the roof system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer since it would allow for the quick covering of a large area while still securing holding down the membrane where needed.

Kelly as modified shows the insulation layer being more resilient than the roof deck as the roof deck is comprised of concrete and metal.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482).

Kelly as modified shows all the claimed limitations except for the gypsum board being ½ inch thick.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's modified board to show the board being ½ inch thick because it would provide for good supporting strength and insulation for the roof.

5. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482) in view of Nurley et al (6250036)

Kelly as modified shows all the claimed limitations except for the membrane being fiberglass reinforced, the membrane being about 80 mil fiberglass reinforced or thicker.

Nurley et al ( col 6 lines 28-45) discloses felt heavily reinforced with fiberglass would provide the properties of silencing sound, cushioning effect and deform slightly when forces are applied generally perpendicular to upper and lower surface of the material.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's modified board to show the membrane being fiberglass reinforced, the membrane being about 80 mil fiberglass reinforced or thicker because having the felt being fiber glass reinforced would provide the properties of silencing sound, cushioning effect and deform slightly when forces are applied generally perpendicular to the surface of the material as taught by Nurley et al, and these properties are desired for a roofing membrane, and having the membrane being 80 mil fiberglass reinforced or thicker would have been obvious to one having ordinary skill in the art as it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Claims 7-8, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482) in view of Bennett.



Kelly as modified shows all the claimed limitations except for the insulation layer is of a resilient material.

Bennett shows the insulation layer is of a resilient material (polystyrene polymer foam, inherently resilient).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's modified structure to show the insulation layer is of a resilient material as taught by Bennett because resilient foam would enable the insulation to provide proper air seal for the roof.

Per claim 8, Kelly as modified shows all the claimed limitations except for the resilient material being about 1.5 inch thick or more.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's modified board to show the resilient material being about 1.5 inch thick or more because it would provide for good air sealing for the roof.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly (6006482) in view of Bennett.

Kelly (figure 30) shows a roof system comprising a roof deck (12), a roof insulation layer (14, lower layer) disposed upon the roof deck, at least 0.5 inch of gypsum board (14 upper layer) disposed upon the insulation layer, the insulation layer is configured to compress to allow energy absorption when the gypsum is struck by an object (inherently so as it is made of gypsum board which would compress when struck), a loose laid, non-reinforced waterproofing membrane (9) with fabricated wrinkles disposed upon the gypsum board, the waterproof membrane is completely unattached to any portion of the roof system at any area of the waterproof membrane

running substantially parallel to a relatively upper surface of the absorbing layer for a substantial length, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer (9, figures 17, 32) , the wrinkles are disposed over an open area of said relatively upper surface of the gypsum board, said upper surface of the gypsum board at the wrinkle allowing the waterproof membrane to be pulled down towards said relatively upper surface of the gypsum board in response to hail impact upon the waterproof membrane without interference from any attaching to the relatively upper surface of the gypsum board or structure between the membrane and the relatively upper surface of the gypsum board (figures 2-3, 25, 32).

Kelly does not show the insulation layer being resilient and made of at least one of expanded polystyrene and polyisocyanurate foam, the waterproof membrane is completely unattached to any portion of the roof system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer.

Bennett shows an insulation layer is of a resilient material (polystyrene polymer foam, inherently resilient), the energy absorbing layer being completely unattached to any portion of the roof system for a substantial length running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's insulating layer to show the layer being made of wood in order to provide the roof structure with an insulating layer that also provides good supporting strength,

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kelly's structure to show the insulation layer is of a resilient material and made of expanded polystyrene as taught by Bennett because resilient foam would provide good insulation for the roof structure as taught Bennett, and having the waterproof membrane is completely unattached to any portion of the roof system at any area of the waterproof membrane running substantially parallel to a relatively upper surface of the absorbing layer, the waterproof running substantially perpendicular to the relatively upper surface of the frangible energy absorbing layer since it would allow for the quick covering of a large area while still securing holding down the membrane where needed.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-10, 12-13, 15, 17-23, 25-26, 28, 30-31 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claim 17, the Board of appeal made the decision on claim 17 on pages 4-7 addressed the claim, and sustained the rejection of claim 17. The rejection is thus repeated above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phi D A whose telephone number is 571-272-6864. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6754. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phi D A/  
Primary Examiner, Art Unit 3633

Phi Dieu Tran A

5/22/2011